

U.S. Serial No.: 10/652,314  
Response under 37 C.F.R. §1.116 dated April 11, 2005  
Response to the Office Action of December 10, 2004

### **REMARKS**

This is in response to the Office Action dated December 10, 2004. Claims 16 and 17 were canceled by this Amendment without prejudice or disclaimer. Claims 1 – 15 and 18-20 remain pending in the present application. Claims 18 and 19 were withdrawn from consideration. Claims 1 and 20 were amended to clarify the substrate onto which the resist is applied. Support for the amendments to claims 1 and 20 can be found in the specification from page 5, last line to page 6, line 7 and FIG. 4. The rejections set forth in the Office Action are respectfully traversed below.

### **Rejections Under 35 U.S.C. §103**

Claims 1 – 15 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Suenaga et al.** (USP 6,569,696) in view of **Anai et al.** (USP 6,459,208) and **Shimane** (U.S. Publication No. 2003/0017256). Claims 16 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Suenaga** in view of **Anai**. The rejections of claims 16 – 17 are moot since these claims were canceled without prejudice or disclaimer. As for the remaining rejections, it is submitted that nothing in the prior art, either alone or in combination, teaches or suggests all the features of the present claimed invention.

For instance, one of the main technical features of the present invention according to claim 1 is that in the consecutive steps from the steps of pretreating a substrate to the step of applying a resist onto the substrate, the humidity of the atmosphere in which the pretreating steps are performed and the humidity of the atmosphere in which the resist applying step is performed

are different from each other. Namely, the humidity of the atmosphere in which the resist applying step is performed is higher than that of the dehumidified atmosphere in which the step of thermal processing and the step of making the surface of the substrate hydrophobic are performed. By making the difference in the humidity of the atmospheres between the pretreating steps and the resist applying step in the consecutive steps, the generation of foreign substances on the surface of the substrate can be suppressed, while the resist film can be formed in a uniform thickness. The present invention is effective in applying a resist onto the substrate containing amorphous silicon on its surface, solving the problem as discussed in the section of the background of the invention in the specification.

The above-described technical feature of the present invention cannot be reached without appreciating the consecutive steps from the steps of pretreating the substrate to the step of applying a resist onto the substrate as integrated steps in the design of the humidity of the atmosphere for the respective steps. In other words, mere independent optimizations of the humidity of the atmosphere for the respective steps cannot lead to the technical feature of the present invention related to the difference in humidity.

As the Examiner admits, the combined teachings of **Suenaga, Anai and Shimane** fail to teach the feature wherein the step of thermal processing to the step of making the substrate surface hydrophobic are performed in a dehumidified atmosphere. It is evident that the combined teachings of these prior arts never disclose nor suggest the relationship between the humidity of the atmosphere for the pretreating steps and the humidity of the atmosphere for the resist applying step. Concretely, the combined teachings of the prior arts never disclose nor

U.S. Serial No.: 10/652,314  
Response under 37 C.F.R. §1.116 dated April 11, 2005  
Response to the Office Action of December 10, 2004

suggest the difference between the humidity of the atmosphere for the pretreating steps and the humidity of the atmosphere for the resist applying step. Therefore, the combined teachings of the prior arts cannot offer total design in the humidity during the consecutive steps from the pretreating steps to the resist applying step.

It is impossible to reach the present invention according to claim 1 without the simultaneous consideration of both of the humidity conditions for the pretreating step and the resist applying step. The combined teachings of the prior arts never disclose nor suggest such simultaneous consideration of both of the humidity conditions for the pretreating step and the resist applying step. Simple combination of **Suenaga**, **Anai** and **Shimane** cannot realize the pair of the technical effects that the generation of foreign substances on the surface of the substrate can be suppressed and the resist film can be formed in a uniform thickness.

Accordingly, even if **Suenaga** were combined with **Anai** and **Shimane**, the present invention according to claim 1 and its direct or indirect dependent claims 2-15 would have been unobvious to one of ordinary skill in the art at the time the invention was made.

The present invention according to claim 20, directed to a method for fabricating a semiconductor device, includes a resist application method similar to the resist application method according to claim 1. Therefore, the same argument as regarding the present invention according to claim 1 is applicable to conclude that the present invention according to claim 20 would have been unobvious to one of ordinary skill in the art at the time the invention was made.

For at least these reasons, the present claimed invention patentably distinguishes over the prior art and it is respectfully requested that these rejections be withdrawn.

U.S. Serial No.: 10/652,314  
Response under 37 C.F.R. §1.116 dated April 11, 2005  
Response to the Office Action of December 10, 2004

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 50-2866.

Respectfully submitted,

**WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP**



John P. Kong  
Attorney for Applicants  
Registration No. 40,054

JPK:kal  
1250 Connecticut Avenue. N.W.  
Suite 700  
Washington, D.C. 20036  
Telephone - (202) 822-1100  
Facsimile - (202) 822-1111  
Q:\2003\031098\Filings\1.111 Amendment - September 2004.doc